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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/699,877  | 11/04/2003  | Chien Yi Liu         | MR1683-510          | 3498             |
| 4586  | 7590        | 12/27/2004           | EXAMINER            |                  |
| ROSENBERG, KLEIN & LEE<br>3458 ELLICOTT CENTER DRIVE-SUITE 101<br>ELLICOTT CITY, MD 21043 |             |                      | KOSSON, ROSANNE     |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 1651                |                  |

DATE MAILED: 12/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

### Application No.

10/699,877

### Applicant(s)

LIU, CHIEN YI

### Examiner

Rosanne Kosson

### Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on November 22, 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                    | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date. _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

The text of those sections of Title 35, U.S. code, not included in this action can be found in a prior office action.

The amendment filed on November 22, 2004 has been received, and the amendments to claims 1-7 have been entered.

Accordingly, claims 1-7 are examined on the merits herewith.

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#### ***Claim Rejections - 35 USC § 103***

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stimac et al. (U.S. 6,280,723) in view of Mitchell et al. (U.S. 4,873,112). Stimac discloses a method of making a dry powder that is a fungal-based entomopathogenic composition comprising spores of the fungus *Beauveria bassiana*. The fungus is incubated with sterile rice, and, when the surface of the rice is covered with the fungus, the mixture is dried at a temperature of 0-20°C. The fungus is then separated from the rice by sieving and mixed with a powder such as cornstarch. The fungus-powder mixture can be applied to nests, traps and other locations where the insects live. This mixture can be packaged for storage (see column 5, line 41, to column 6, line 25, and column 6, lines 36-52). Other fungi that are known to act as insecticides include *Metarhizium anisopliae* (see column 3, line 59, to column 4, line 16).

Stimac does not disclose adding the powder before removing the rice or the moisture content of the spores. Although the moisture content of the fungal spores of

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Stimac is not indicated, the dried spores remain viable and effective when they are applied to insects. The determination of a suitable moisture content of the spores would, therefore, have been considered a parameter which would have been routinely optimized by one of ordinary skill in the art of preparing dried fungal spores. Moreover, with respect to the addition of powder to the spores before separation from the rice, based on Stimac's disclosure of the importance of adding powder to the spores, the artisan of ordinary skill would have recognized that the powder would have been desirably added to the spores before or after removal from the rice. The claimed addition of powder to the spores before separation from the rice clearly meets Stimac's objective of combining the spores and the powder. Thus, the claimed variations in Applicant's process with respect to these parameters clearly would have been obvious at the time of Applicant's invention, the optimization of these parameters being well within the capabilities of one of ordinary skill in the art at the time of Applicant's invention.

Stimac also does not disclose combining maltodextrin, which is an  $\alpha$ -amylase hydrolysis product of cornstarch, with the fungal spores. Mitchell, however, discloses that maltodextrin, prepared from starch, is a very good drying agent (see column 8, lines 16-41). A drying agent, such as cornstarch or talc, as disclosed by Stimac, functions in keeping the insecticide powder stable and in a form that can be easily handled (see column 6, lines 5-21). Thus, one of ordinary skill in the art at the time that the invention was made would have recognized that the method of Stimac for preparing a fungal-based insecticide powder would have been modified by substituting maltodextrin for

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cornstarch because of the superior drying properties of maltodextrin, as disclosed by Mitchell. Because it would have been obvious to the artisan of ordinary skill to use maltodextrin instead of cornstarch for the advantages disclosed in Mitchell, a holding of obviousness is required.

All of Applicant's arguments have been considered but are not persuasive of error. Firstly, Applicant asserts that the Stimac reference discloses a completely different fungus than the instant application and that Stimac teaches away from the use of the fungus in Applicant's specification, *M. anisopliae*. Applicant points to col. 4, lines 13-18, which state that, although *M. anisopliae* has been shown to control insects under laboratory conditions, its effect in the field has generally been lacking. Stimac, however, does consider *M. anisopliae* to be an insect pathogen (see col. 3, lines 59-60). Even if one were to fail to recognize *M. anisopliae*'s utility as an insecticide, as urged by Applicant, one of ordinary skill would have been motivated to have made *M. anisopliae* preparations according to Stimac's methods for use in the applications disclosed at col. 4, lines 13-18.

Secondly, Applicant asserts that because Mitchell discloses maltodextrin as a drying agent in connection with a food product, Mitchell cannot be combined with Stimac. In response, the two references may be combined because Mitchell discloses the properties of maltodextrin as a drying agent, and the intended use of the drying agent is not relevant. Important, though, is the property that maltodextrin is a biocompatible drying agent. The claimed insecticidal preparation contains fungal

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spores that must remain viable. Thus, one of ordinary skill in the art looking for a drying agent to use in connection with this preparation would have turned to references that disclose a commercially available, biocompatible drying agent.

Thirdly, Applicant asserts that Stimac does not disclose maltodextrin and that maltodextrin is not equivalent to cornstarch or talc. In response to Applicant's argument that the reference fail to show certain features of Applicant's invention, it is noted that the feature upon which applicant relies (i.e., maltodextrin) is not recited in claims 1, 2 or 5, which recite any powder. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Further, cornstarch or talc are functional equivalents of maltodextrin, even of water-soluble maltodextrin, because, in the claimed method, maltodextrin is used as a dry powder to make a composition that is a dry powder.

Fourthly, Applicant asserts that the insecticidal preparation of Stimac is not effective because Stimac does not mention insects besides termites. Once again, Applicant argues that the reference fails to show certain features that are not recited in the claimed invention. The instant claims recite entomopathogenic fungi but do not recite any particular insect. In view of the foregoing, additional references to support Stimac, an issued U.S. patent, are not required.

Next, Applicant asserts that the claimed invention differs from Stimac in that, in Applicant's process, powder is added to the dried rice-fungal spore composition before sieving while Stimac teaches adding powder after sieving. Applicant should note that

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the claims as amended recite a process comprising the steps of drying a rice-fungal spore composition and adding and stirring a predetermined powder to it. There is no sieving step. The claims merely recite the functional limitation in the adding/stirring step that the spores are separable from the cooked rice by sieving. Stimac teaches that the spores are separable from the rice by sieving. Whether the powder is added before or after sieving, the same composition is obtained, i.e., a dry insecticidal preparation that may be stored for a certain period of time without refrigeration. Consequently, adding the powder before sieving does distinguish the claimed invention to the point of overcoming the rejection of obviousness.

Lastly, Applicant asserts that Mitchell is constrained to using a particular type of maltodextrin, one with a DE (dextrose equivalent) below 20-25, and that this is not a superior drying agent because it would "remove as little water as is absolutely necessary in the drying process." Again, Applicant has taken a sentence out of context. Mitchell is not constrained to a particular type of maltodextrin (see col. 8, lines 28-35). Mitchell discloses that hydrolyzed starch of less than 25 DE is a very good drying agent, and that certain commercially available maltodextrins with a DE below 20 would be logical to use in a step where one wishes to remove as little water as possible and still have the process work, that is, where one wishes to save time and energy. But, the type of maltodextrin with respect to DE is not a limitation recited in the claims. Claims 3, 4, 6 and 7 recite water-soluble maltodextrin, and, as discussed above, claims 1, 2 and 5 do not recite maltodextrin.

In view of the foregoing, the rejection of record must be maintained.

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No claim is allowed.

The following reference is cited to further show the state of the art: Milner, Biocontrol News and Information 21(2):47N-50N, 2000.

Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rosanne Kosson whose telephone number is 571-272-2923. The examiner can normally be reached on Monday-Friday, 8:30-6:00, with alternate Mondays off.




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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Wityshyn can be reached on 571-272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Rosanne Kosson  
Examiner  
Art Unit 1651

rk  
2004-12-17



FRANCISCO PRATS  
PRIMARY EXAMINER